

RONALD FRICKE *

A NEW SPECIES OF THE DRAGONET GENUS *SYNCHIROPUS*
FROM THE MARIANA ISLANDS
(TELEOSTEI: CALLIONYMIDAE)

INTRODUCTION

Examining unidentified specimens of callionymid fishes from the University of Guam, UOG Station, Marine Laboratory, Mangilao, Guam (UG), I found specimens of a previously undescribed species of the genus *Synchiropus* Gill, 1860 that is described in the present paper. The genus *Synchiropus* was revised by FRICKE (1981), and later by FRICKE (1983: Indo-Pacific species). FRICKE (1982) compiled all nominal and valid species of *Synchiropus* known at that time. In the meantime, another species of the *postulus*-group of *Synchiropus* was described by FRICKE & ZAISER (1983), and another new species of the *ocellatus*-group from Miyake-jima (Japan) is going to be described by ZAISER & FRICKE (in press).

The ichthyofauna of the Mariana Islands was described by SCHULTZ (1960). He recognized two dragonet species, *Synchiropus laddi* Schultz, 1960, and *S. morrisoni* Schultz, 1960, but both were known only from Marshall Islands, not from Mariana Islands. None of the two species was later recorded from our area. MYERS & SHEPARD (1980: 326) cited the specimens described in the present paper as « *Synchiropus* sp. 1 ». Their « *Synchiropus* sp. 2 » is based on *Anaora tentaculata* Gray, 1835. Therefore, the new species is the first *Synchiropus* to be described from the Mariana Islands.

Methods follow FRICKE (1983). The holotype and one paratype were deposited in the collection of the National Museum of Natural History, Washington D.C. (USNM). Another paratype is in the Bernice P. Bishop Museum, Honolulu (BPBM).

* Staatliches Naturhistorisches Museum, Pockelsstrasse 10 A, D-3300 Braunschweig, Federal Republic of Germany

***Synchiropus (Synchiropus) circularis* new species (Fig. 1)**

Synchiropus sp. 1: Myers & Shepard, 1980: 326 (Guam, Tinian).

Material: USNM 267390, holotype, male, 27.4 mm SL, Beach Cove Cave, northwest of Tinian Town, Tinian, Mariana Islands, 14° 59.7' N 145° 36.2' E, R.S. Jones, T. Tsuda, R. Struck & R. Randall, 15 Aug. 1970.

USNM 267391, paratype, female, 23.9 mm SL, with the same data as the holotype.

UG 5764, 1 male, 27.0 mm SL, Double Reef, Guam, Mariana Islands, 25 feet depth (7.6 m), H. Kami, R.S. Jones, 5 Oct. 1968.

UG 5130, 1 female, 10.0 mm SL, with the same data as the holotype.

BPBM 29653, 1 male, 27.6 mm SL, with the same data as the holotype.

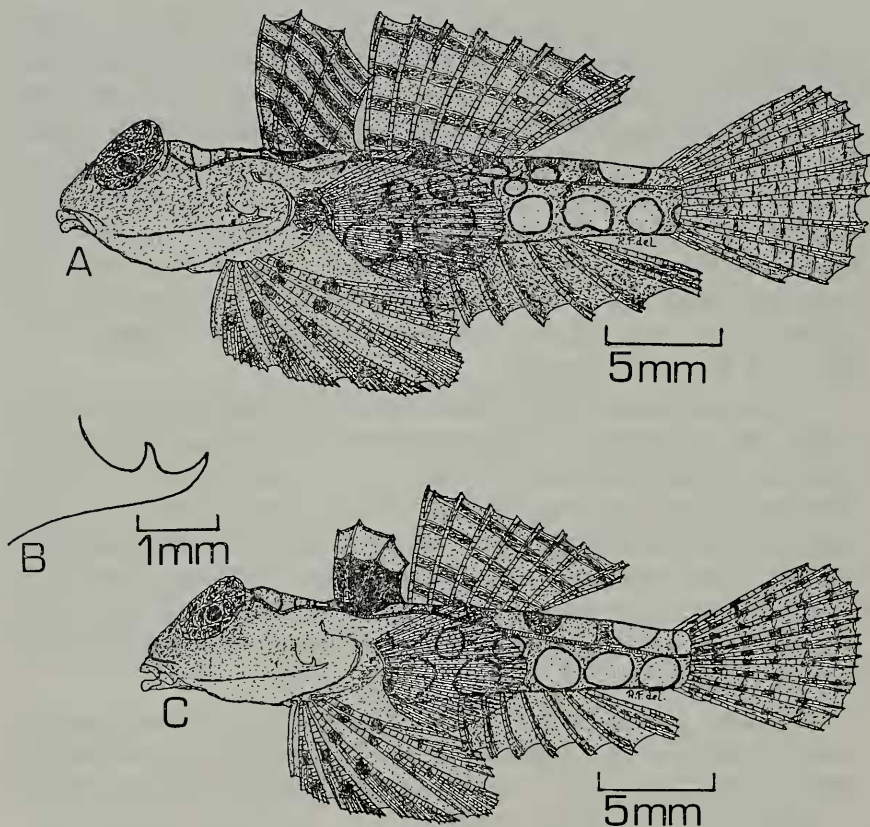


Fig. 1 - *Synchiropus circularis* n.sp.: Tinian, Marianas Islands. USNM 267390, male, 27.4 mm SL, holotype: A. Lateral view. B. Left preopercular spine. USNM 267391, female, 23.9 mm SL, paratype: C. Lateral view.

Diagnosis: A *Synchiropus* of the subgenus *Synchiropus* with 4 spines in the first dorsal fin, 8 rays in the second dorsal fin, usually 7 rays in the anal fin, 21-23 pectoral fin rays, a preopercular spine with a very long main tip and a formula of $-\frac{1}{-}1$, circular white blotches on the sides of the body and circular dark brown blotches on the back, the first dorsal fin in the male with oblique ocellate dark brown streaks, but without ocelli, and in the female basally dark brown, but distally whitish (except for a dusky distal margin).

Description: D₁ IV; D₂ 8; A 7 (—8); P₁ i, 20-22 (totally 21-23); P₂ I,5; C (ii), i, 7, ii, (i). Vertebrae 6-7 + 14 (totally: 20-21). Proportions of the holotype and paratypes see Tab. 1. Data of paratypes in parentheses.

Body elongate and slightly depressed. Head depressed, 3.2 (3.1-3.3) in SL. Body depth 5.1 (4.9-5.3) in SL. Body width 4.6 (4.3-4.5) in SL. Eye diameter 2.4 (2.3-2.9) in head. Preorbital length 3.7 (3.6-4.0) in head. Interorbital width 8.5 (8.7-8.8) in head. Occipital region smooth. Branchial opening sublateral in position. Preopercular spine length 4.4 (4.9-5.1) in head; preopercular spine with a very long, upcurved main tip, a smooth ventral margin and base, and one curved point on its dorsal margin (formula: $-\frac{1}{-}1$; see Fig. 1B). Urogenital papilla small in the male, slightly elongate, more than 23.6 in head; not visible in the female. Caudal peduncle length 5.9 (5.6-6.0) in SL. Caudal peduncle depth 9.6 (9.8-10.0) in SL.

First dorsal fin as high as second dorsal fin in the male, lower in the female; first spine in the male 4.6 (6.1) in SL, in the female 7.4 in SL; second spine in the male 4.3 (4.4) in SL, in the female 6.4 in SL; third spine in the male 5.0 (4.3) in SL, in the female 7.7 in SL; fourth spine in the male 6.7 (6.1) in SL, in the female 12.6 in SL. Second dorsal fin distally straight or slightly convex, first ray in the male 4.4 (4.0) in SL, in the female 4.6 in SL; last ray in the male 4.5 (4.7) in SL, in the female 5.1 in SL. Predorsal (1) length 3.0 (2.8-2.9) in SL. Predorsal (2) length 2.0 (2.0-2.1) in SL. Anal fin beginning on a vertical through about third or fourth ray of second dorsal fin. First ray in the male 9.4 (9.9) in SL, in the female 9.3 in SL. Last ray in the male 4.6 (5.3) in SL, in the female 5.4 in SL. Preanal fin length 1.7 (1.7-1.8) in

SL. Pelvic fin reaching back to base of third anal fin ray. Pelvic fin length 2.4 (2.4-2.6) in SL. Prepelvic fin length 3.7 (3.7) in SL. Pectoral fin reaching back to about fourth anal fin ray base. Pectoral fin length 3.6 (3.8-4.1) in SL. Prepectoral fin length 2.3 (2.3-2.4) in SL. Caudal fin distally slightly convex; caudal fin length 3.2 (3.2) in SL.

Colour in alcohol: Body light brown, back around base of first dorsal fin with a dark brown circular blotch; behind this blotch 4 or 5 brown saddles. Sides of body with 2 rows of large circular light blotches. Belly and thorax whitish. Eye dark gray. First dorsal fin in the male light brown, with about six ocellate oblique dark brown streaks. First dorsal fin in the female basally dark brown, distally whitish, with a narrow distal dusky margin. Second dorsal fin light, each membrane with 3-4 horizontal ocellate dark brown streaks. Anal fin dusky, with darker pigmentation behind the rays. Pectoral fin with dark brown spots in the male, colorless in the female. Pelvic fin with 2 basal oblique bands of dark brown blotches, and a few irregular dusky spots distally. Caudal fin with dark blotches or vertical dusky lines.

Colour in life: Not known; on the original label of the holotype was noted: «Scarlet below head and on breast».

Distribution: This new species is known from the type locality, Tinian, Mariana Islands, and from Guam, also Mariana Islands. It has been collected in shallow water (down to about 8 meters).

Etymology: *circulus* (lat.) means circular. The name refers to the circular white blotches on the sides of the body.

Table 1 - Proportions of the holotype and two paratypes of *Synchiropus circularis* n. sp. from the Mariana Islands (expressed as hundredths of SL).

	USNM 267390 holotype, male 27.4 mm SL	UG 5764 paratype, male, 27.0 mm SL	USNM 267391 paratype, female, 23.9 mm SL
Predorsal (1) length	33.49	34.90	35.45
Predorsal (2) length	49.65	49.78	48.04
Preanal fin length	57.50	54.52	58.32
Prepelvic fin length	27.07	27.28	27.30
Head length	31.01	30.79	32.36
Caudal fin length	31.05	31.20	31.69
Eye diameter	12.77	10.55	13.88
First D ₁ spine length	21.85	16.32	13.42
Last D ₂ ray length	22.25	21.10	19.44
Last A ray length	21.60	18.95	18.35
Pelvic fin length	41.23	38.64	42.14

Relationships: This new species is a member of the *ocellatus*-group (*sensu stricto*) of the genus *Synchiropus*. It is distinguished from *S. bartelsi* Fricke, 1981 (FRICKE, 1981: 103-106, fig. 32, Philippines and Indonesia; FRICKE, 1983: 583-587, fig. 176, also Bismarck Archipelago) by the preopercular spine formula of $-\frac{1}{-}1$ instead of

$-\frac{2}{-}1$, the much longer preopercular spine main tip, the first dorsal

fin of the male that has ocellated dark brown streaks on the first membrane also, and the large circular white blotches on the sides of the body. It differs from *S. morrisoni* Schultz, 1960 (FRICKE, 1981: 98-102, fig. 132, Caroline Islands to American Samoa; FRICKE, 1983: 630-635, figs. 195-196, also Miyake-jima/Japan, Marshall Islands, Fiji, and Western Australia) in the preopercular spine formula of $-\frac{1}{-}1$, the oblique

dark streaks in the first dorsal fin (not vertical), the anal fin color pattern, and the large circular white blotches on the sides of the body. *Synchiropus circularis* can be distinguished from *S. ocellatus* (Pallas, 1770) (FRICKE, 1981: 90-97, figs. 28-29; Okinawa to Vietnam, Philippines, Australia and Tonga; FRICKE, 1983: 635-642, fig. 197, also Miyake-jima/Japan, Marquesas Islands, Pitcairn, Marshall Islands) by the much longer main tip of the preopercular spine (main tip being larger than dorsal point), the first dorsal fin of the male with oblique dark brown bands, but without ocelli, the anal fin color pattern, and the large circular white blotches on the sides of the body. It differs from *S. stellatus* Smith, 1963 (FRICKE, 1981: 107-110, figs. 33-34, South Africa to Sri Lanka; FRICKE, 1983: 677-681, figs. 209-210, also large male described) in having no ocelli on the first dorsal fin of the male, in a longer main tip of the preopercular spine, a circular dark brown blotch around the base of the first dorsal fin, a different anal fin color pattern, a different caudal fin color pattern, no ocelli on the sides of the head, and in having large circular white blotches on the sides of the body. *Synchiropus circularis* differs from *Synchiropus* sp. (ZAISER & FRICKE, in press, Miyake-jima/Japan) in the longer preopercular spine main tip, the lower first dorsal fin of the male without ocelli, the different anal fin color pattern, the lacking ocelli on the sides of the head of the male, and the presence of large circular white blotches on the sides of the body.

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ABSTRACT

Synchiropus (*Synchiropus*) *circularis* n. sp. from Tinian, Mariana Islands, and Guam, differs from allied species in the fin formulae D_1 IV, D_2 8, A 7, P_1 totally 21-23, its preopercular spine formula $-\frac{1}{-}1$ with a very long upcurved main tip, the first dorsal fin in the male with oblique dark brown ocellated bands, but without ocelli, the base of the first dorsal fin surrounded by a circular dark brown blotch, and the sides of the body with large circular white blotches. The new species is described, illustrated, and compared with allied species of the *ocellatus*-group of the genus *Synchiropus*.

RIASSUNTO

Synchiropus (*Synchiropus*) *circularis*, nuova specie delle Isole Marianne, differisce dalle specie congeneri nella formula delle pinne: D_1 IV, D_2 8, A 7, P 21-23; nella formula della sua spina preopercolare $-\frac{1}{-}1$ con una punta principale molto lunga curvata in alto; prima pinna dorsale nel maschio con bande oblique bruno-scuri ocellate, ma senza ocelli; base della prima pinna dorsale circondata da una macchia circolare bruno scura; lati del corpo con larghe macchie bianche circolari. La nuova specie è descritta, illustrata e confrontata con le specie congeneri del gruppo *ocellatus*.